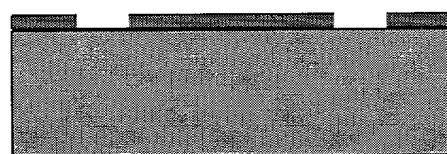


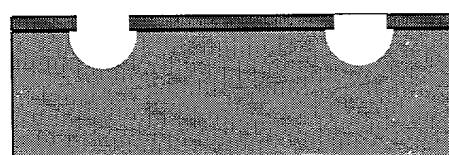
1. Start Substrate Wafer



2. Deposit Masking Material



3. Pattern Masking Material



4. Etch Substrate Wafer

FIG. 1
MICROFABRICATION PROCESS

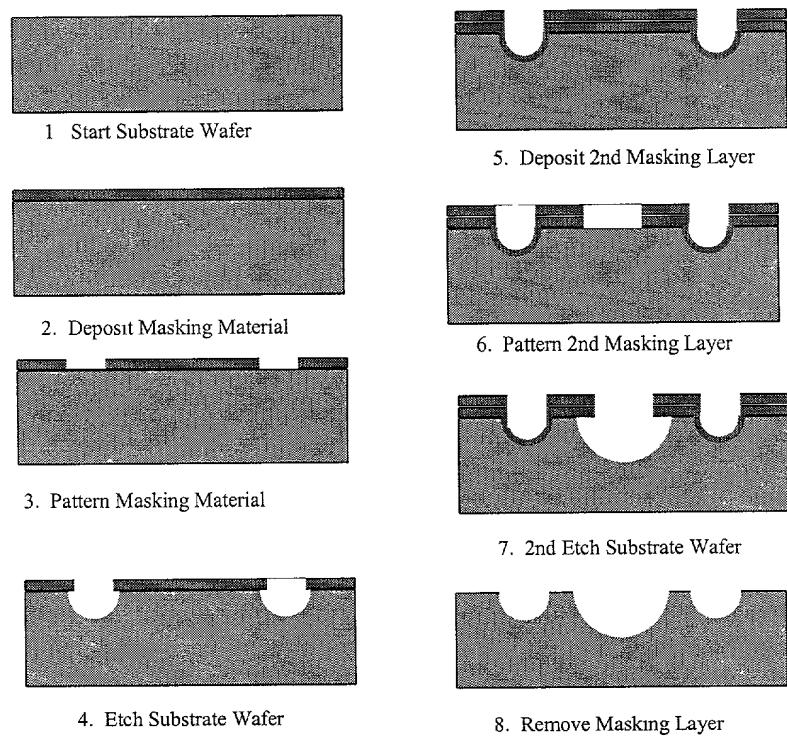
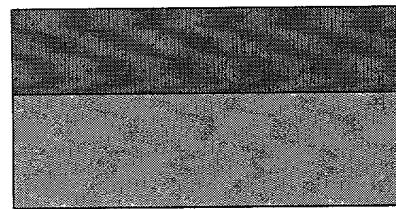


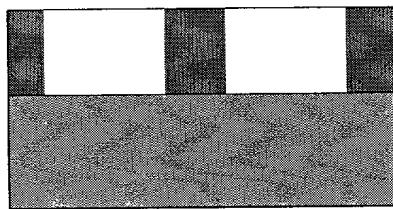
FIG. 2.
MULTI-DEPTH MICROFABRICATION PROCESS.



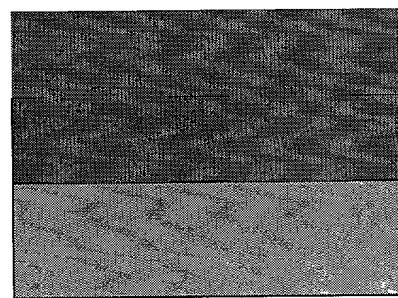
Starting Wafer



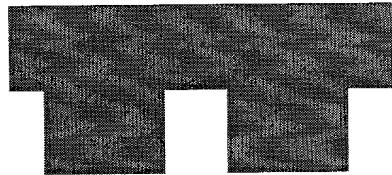
Apply Thick Resist



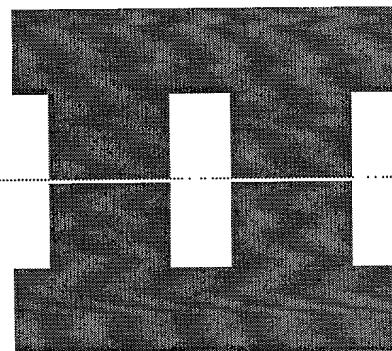
Pattern Thick Resist



Pour Biodegradable Polymer Material into Mold



Remove Scaffold from Mold



Bond Scaffolds

FIG.3.
SCAFFOLD FABRICATION PROCESS FROM MOLDS

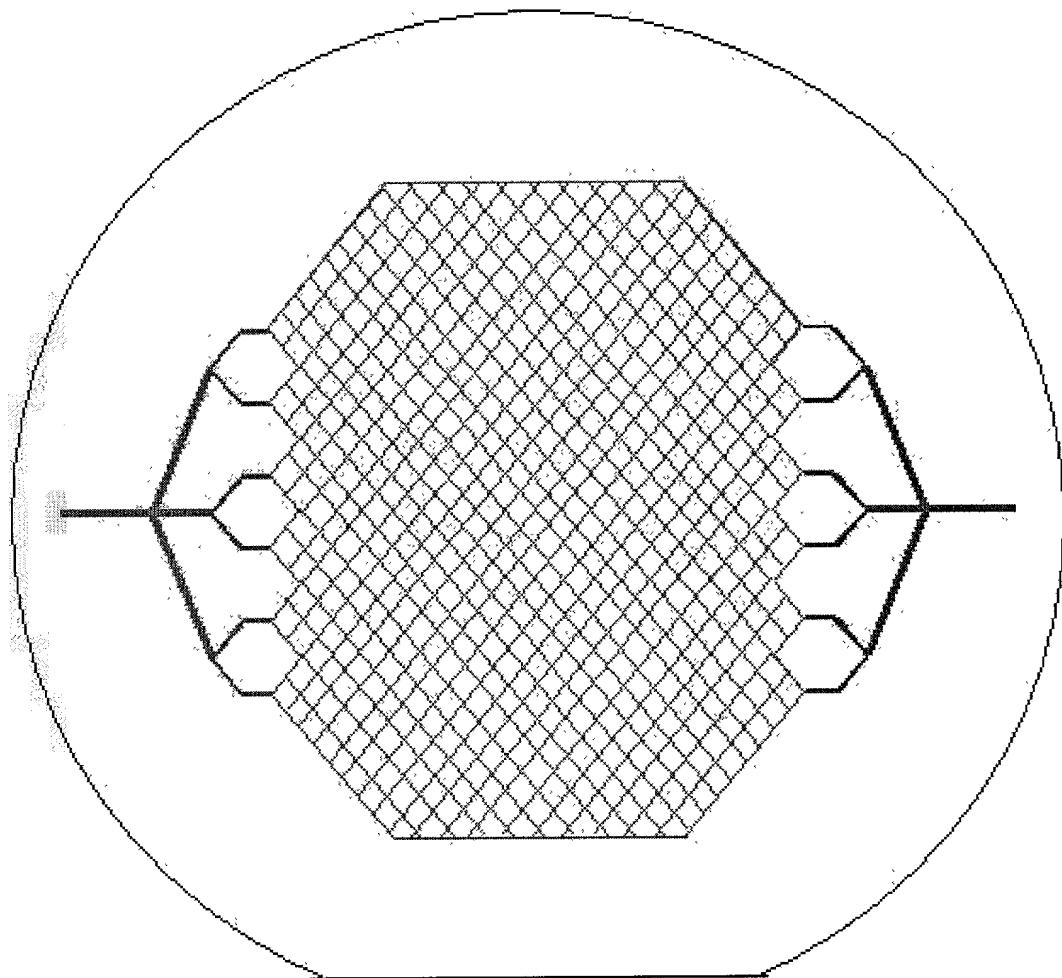


FIG. 4
VASCULAR PATTERN OF TEP-0

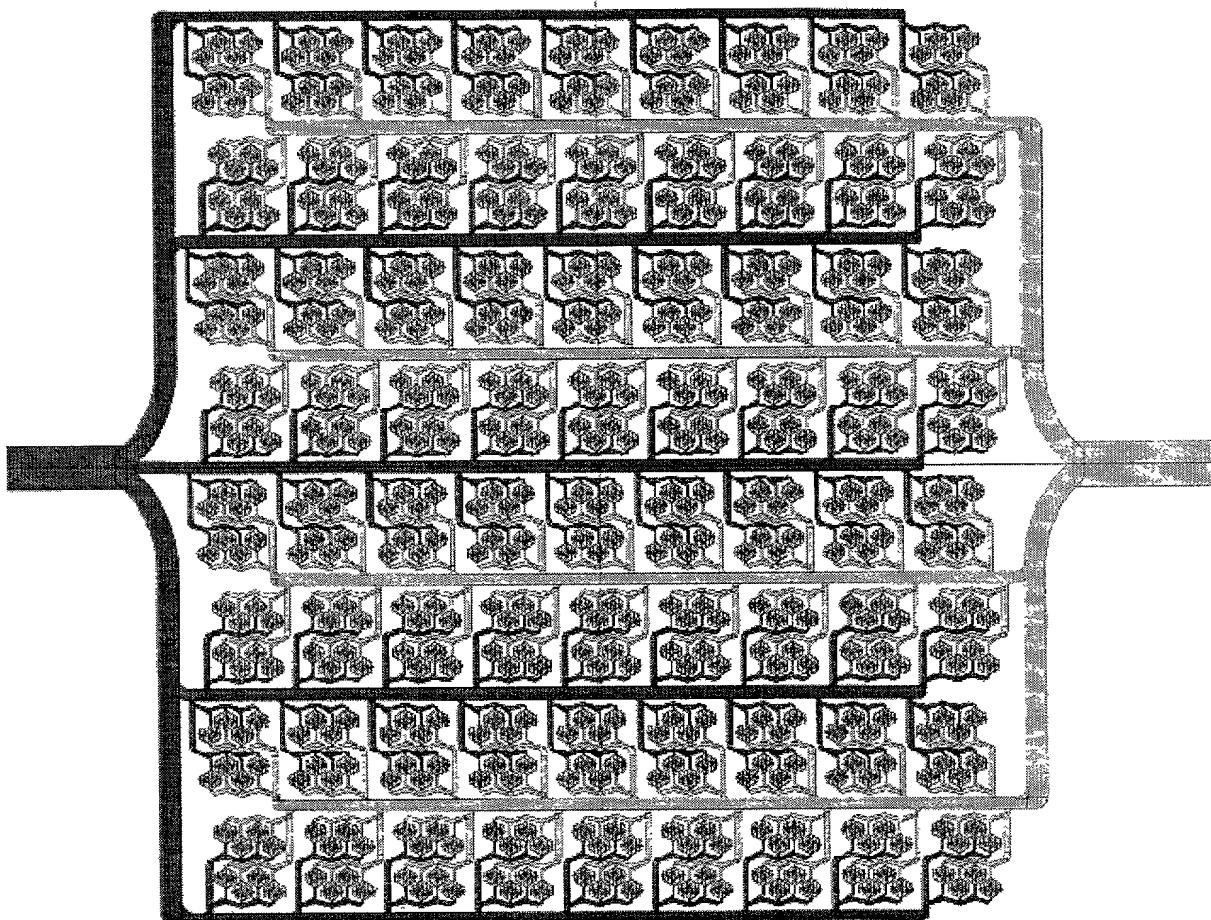


FIG. 5
VASCULAR PATTERN OF TEP-1

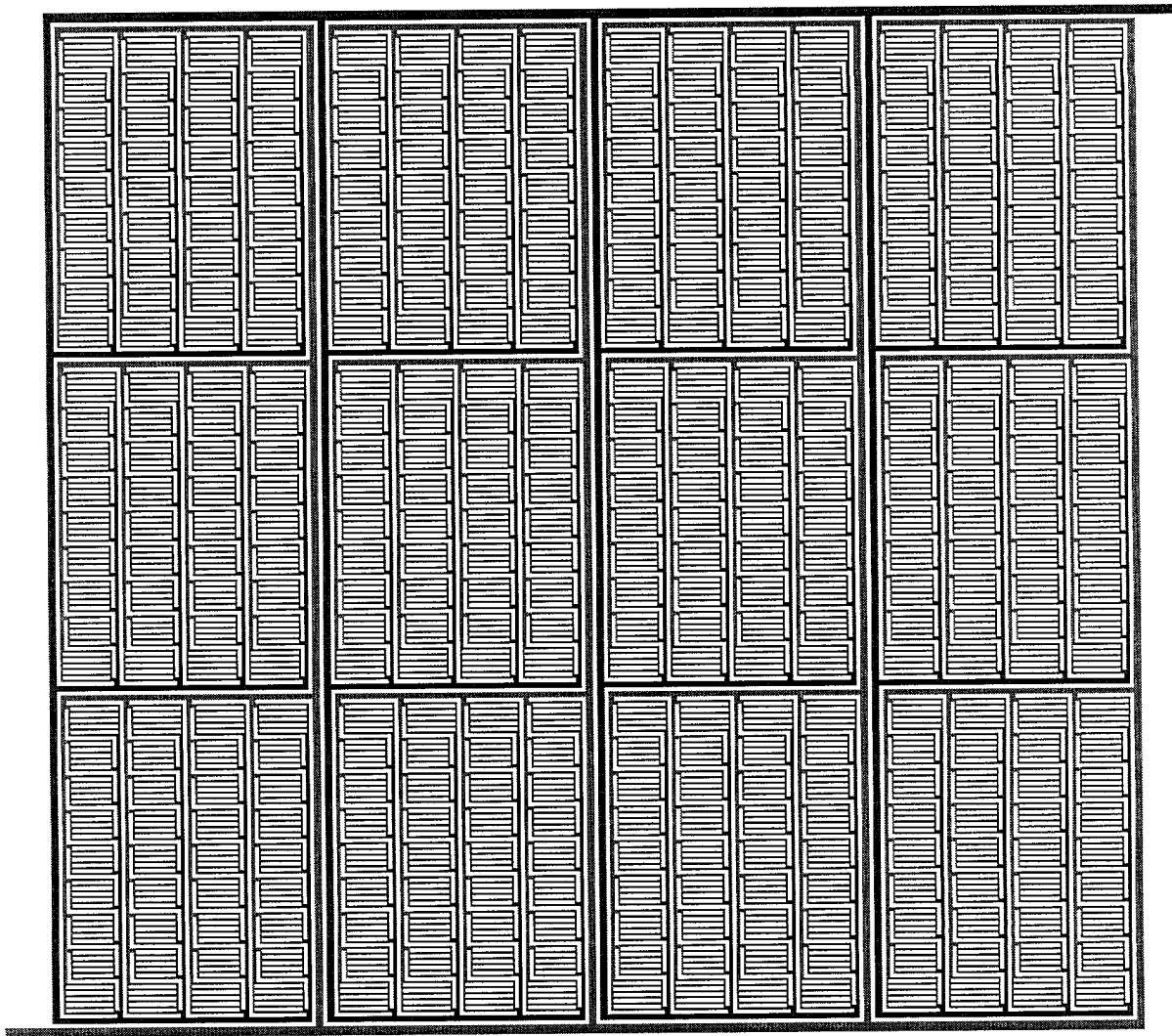


FIG. 6
VASCULAR PATTERN OF TEP-2a

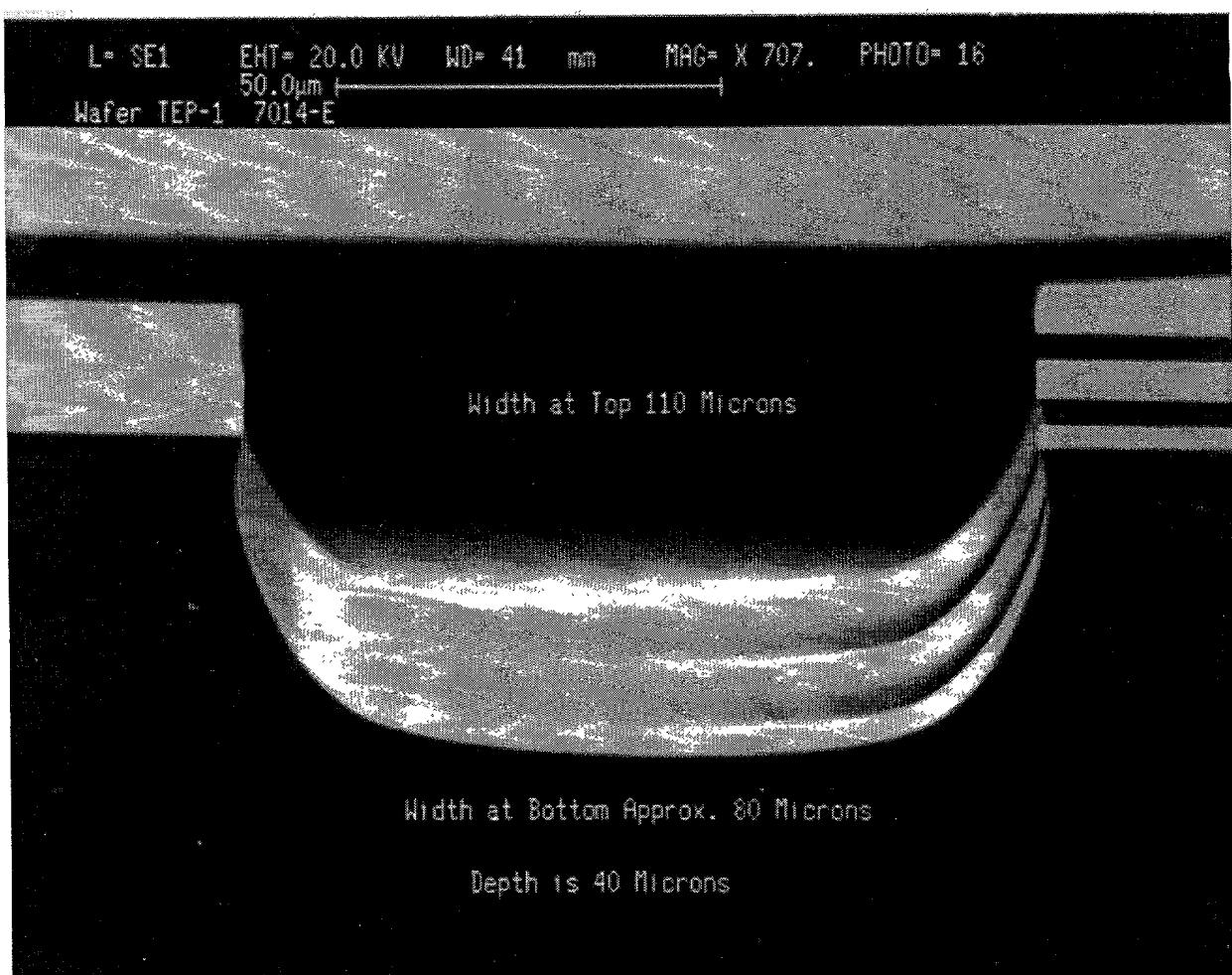


FIG. 7
CHANNEL FORMED BY OPTIMIZED PLASMA ETCHING

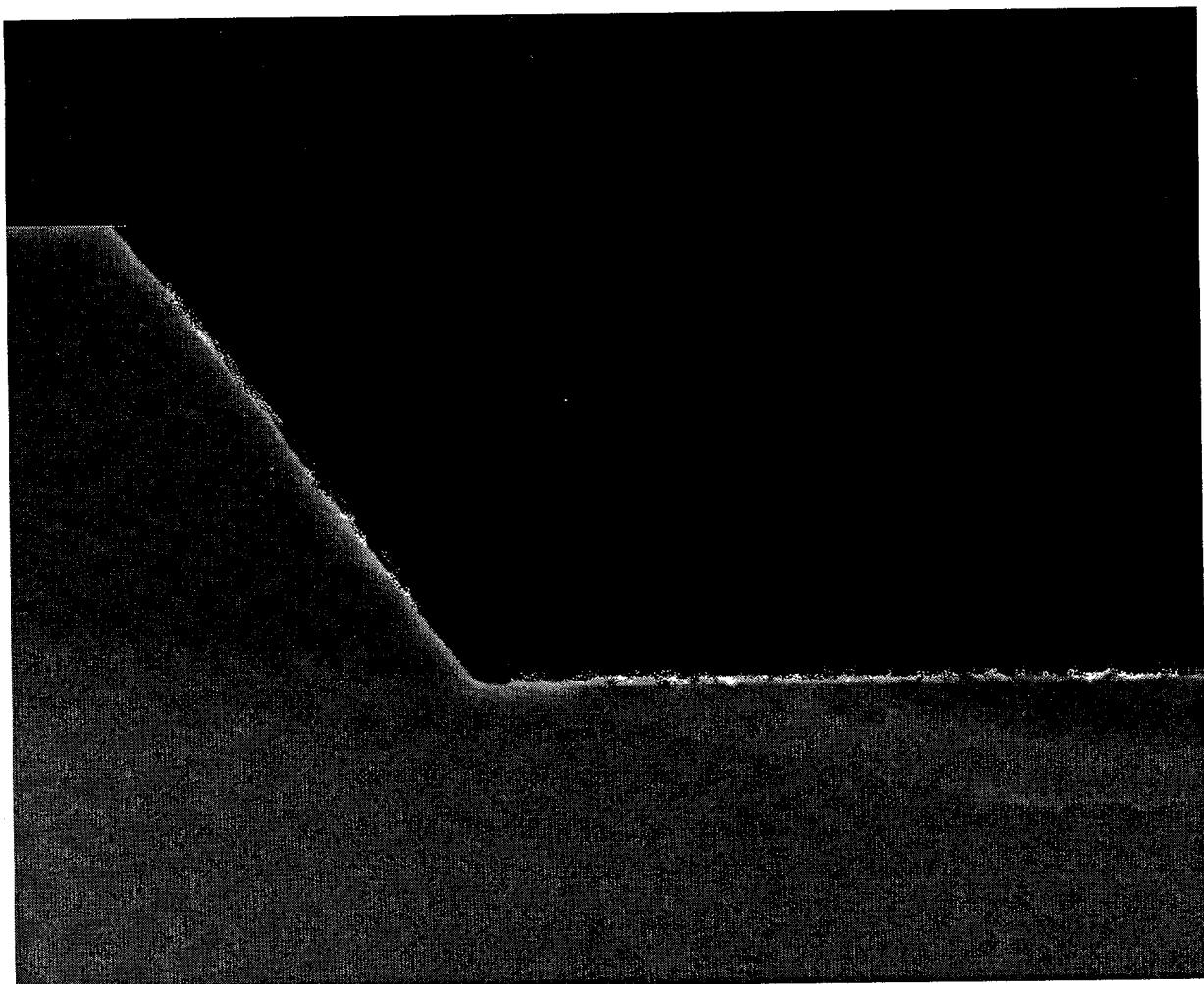


FIG. 8
ANGLED SIDEWALL PRODUCED BY KOH ETCHING

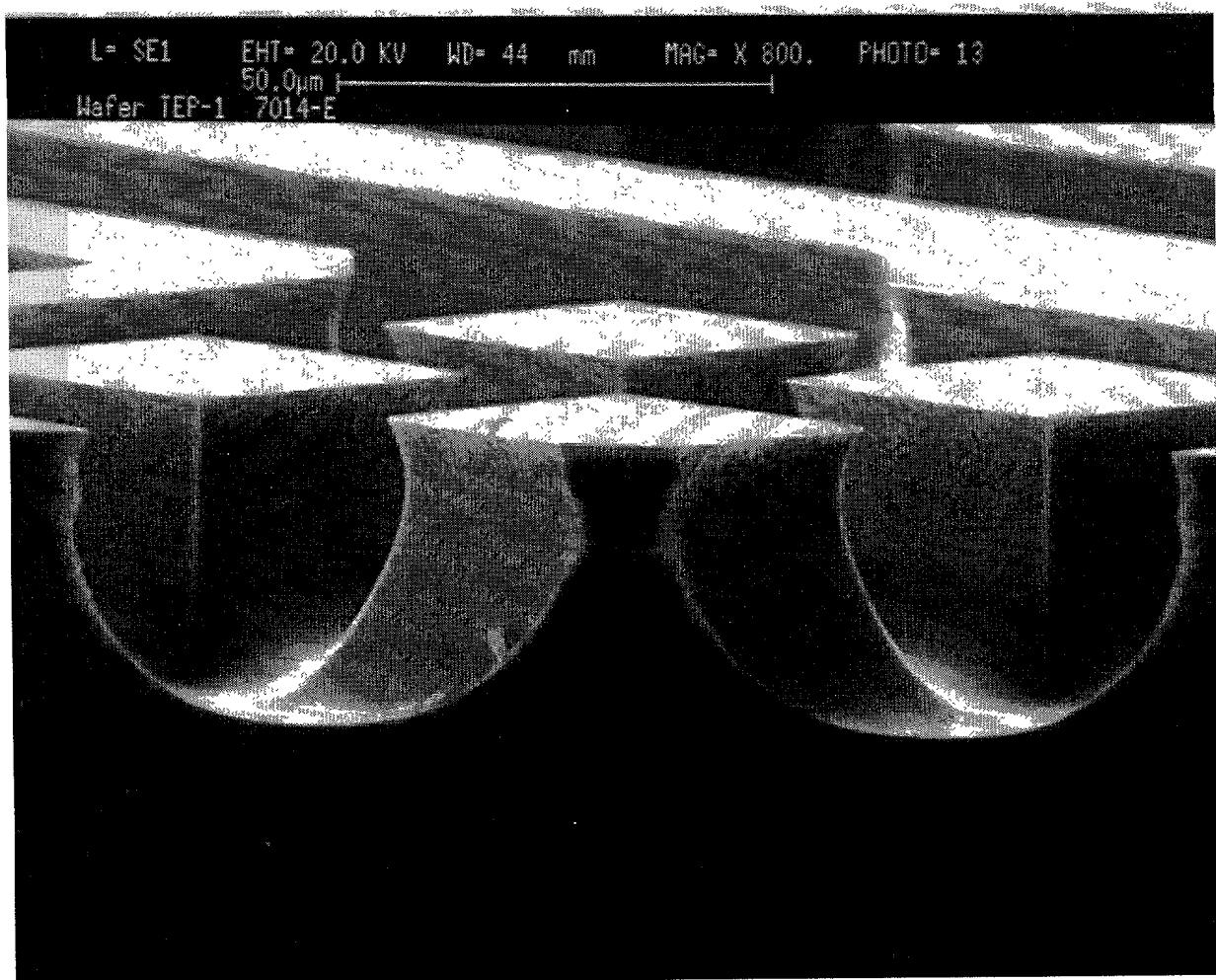


FIG. 9
SHARP CURVES AND CORNERS DUE TO ETCH BEHAVIOR
AT INTERSECTIONS BETWEEN CHANNELS

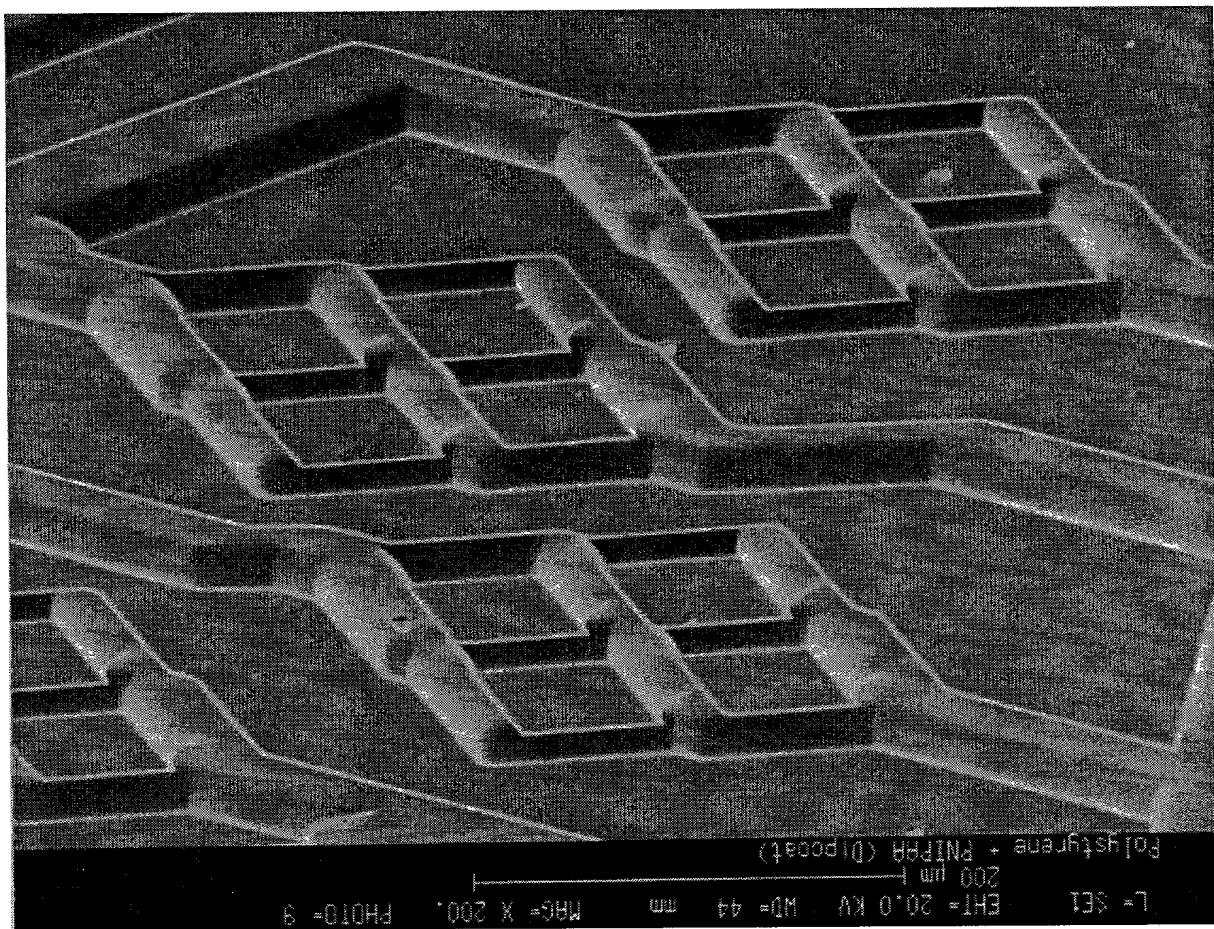


FIG. 10
NEGATIVE MOLD WITH CHANNELS RAISED

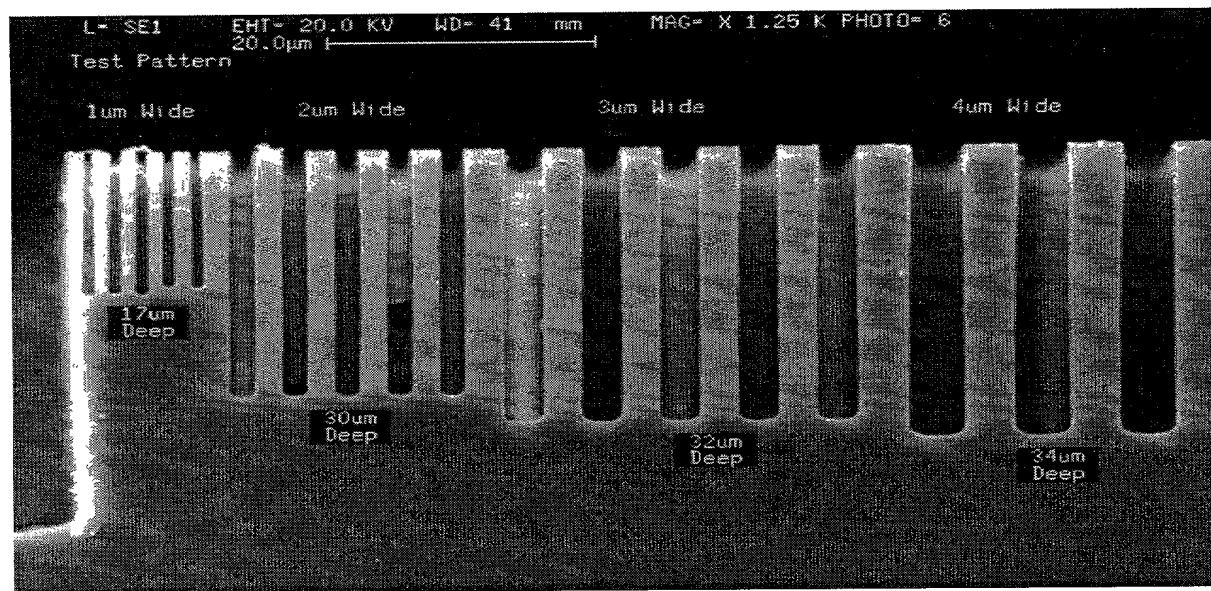


FIG. 11
SCANNING ELECTRON MICROGRAPH OF
VARIED-WIDTH AND VARIED-HEIGHT CHANNELS

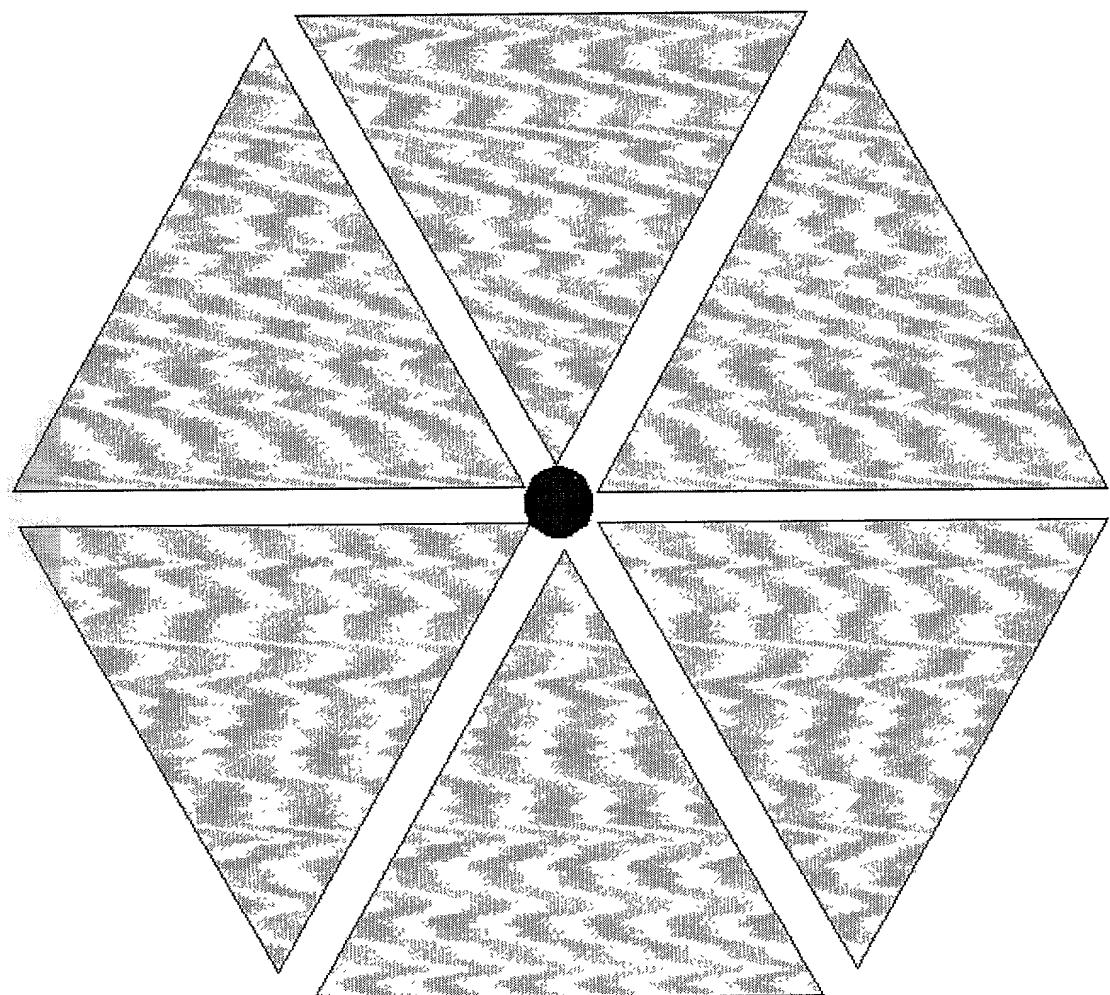


FIG. 12
MICROMACHINED UNIT WITH THROUGH-HOLE

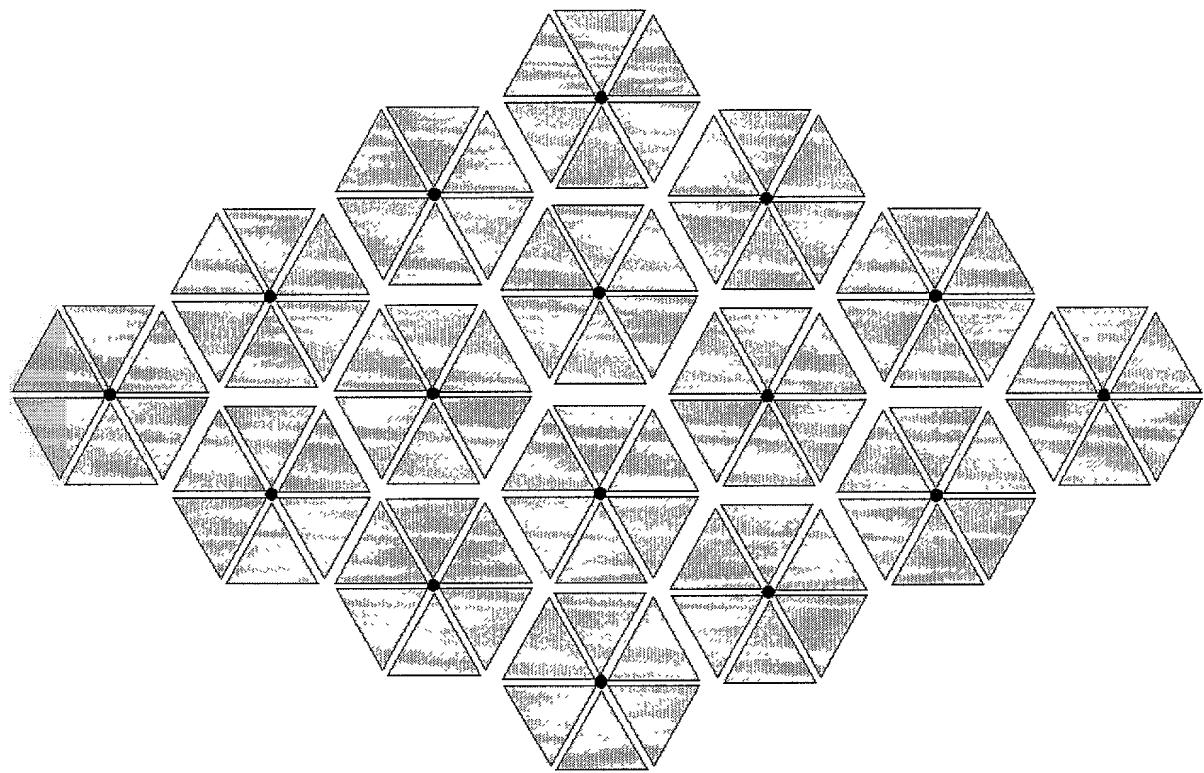


FIG. 13
SET MICROMACHINED UNITS WITH THROUGH-HOLES

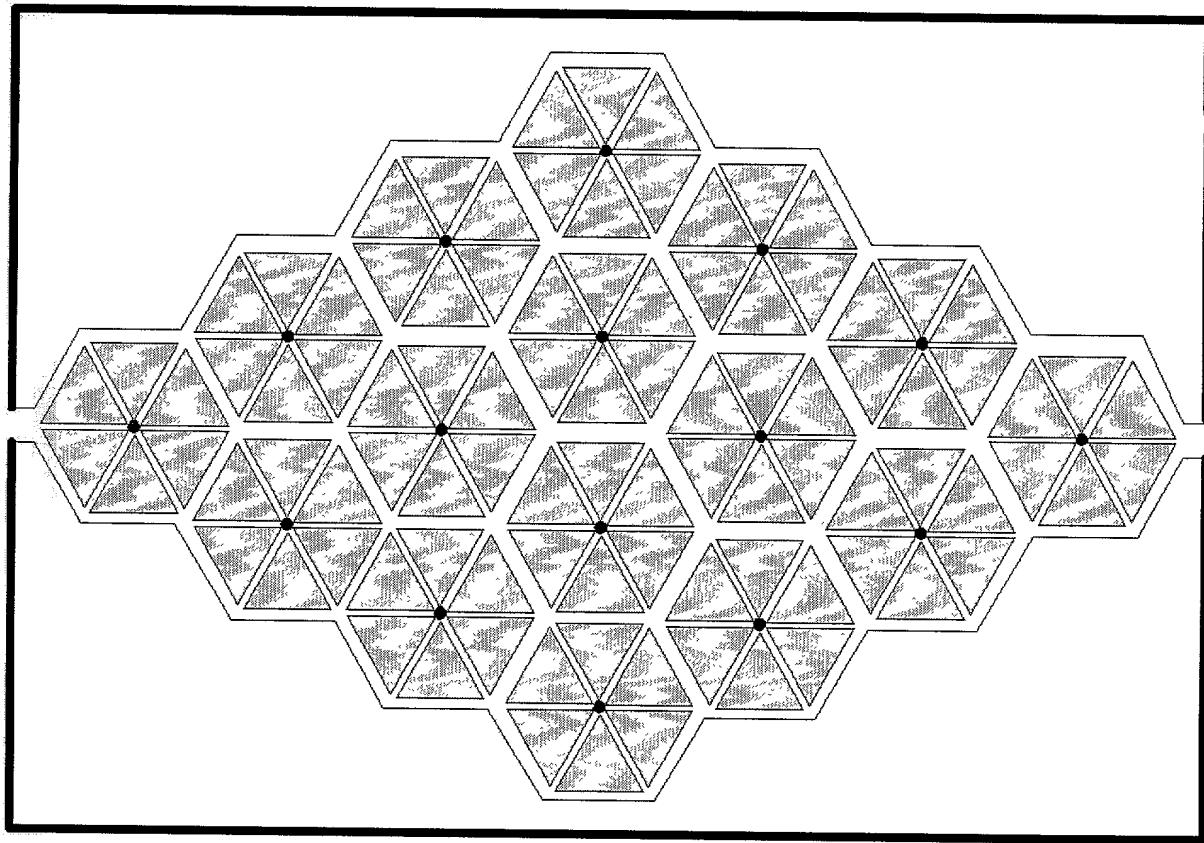


FIG. 14
SCAFFOLD WITH SET OF MICROMACHINED UNITS, THROUGH-HOLES AND
CHANNELS

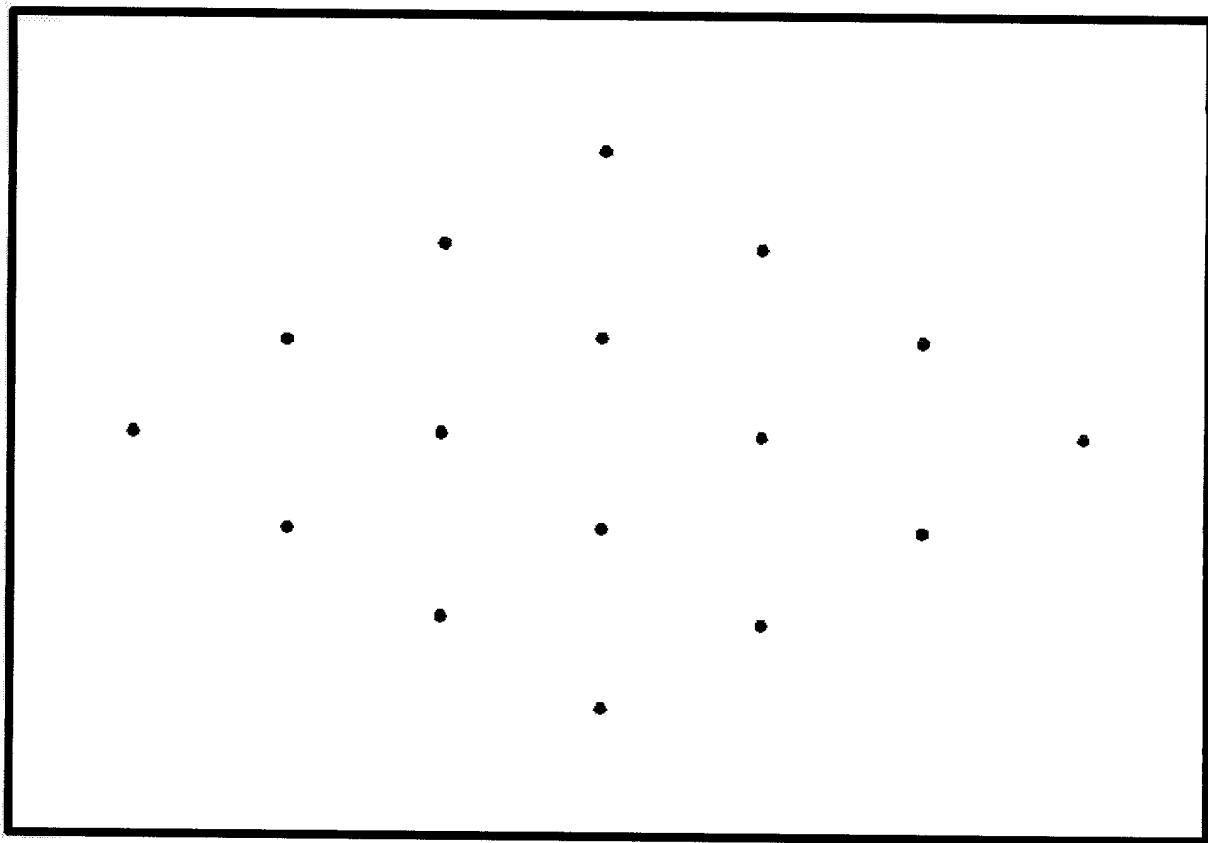


FIG. 15
SCAFFOLD WITH THROUGH-HOLES

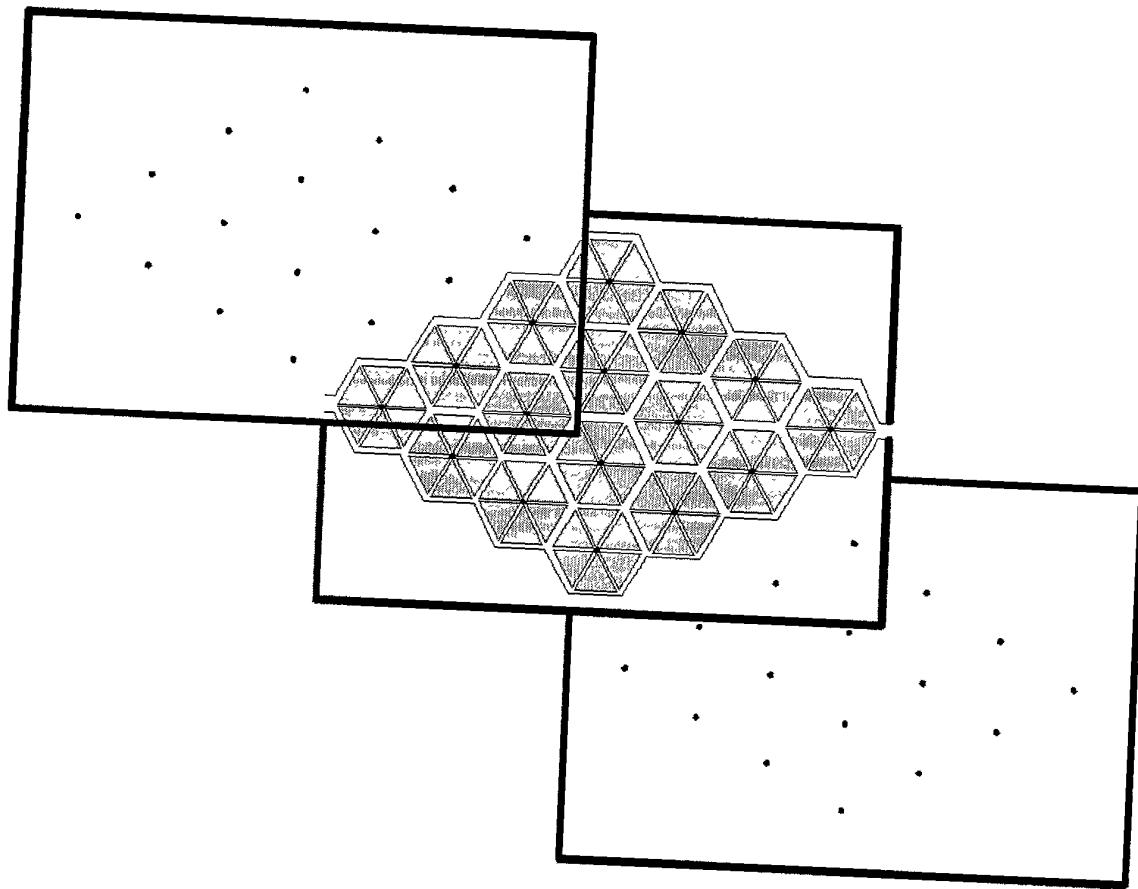


FIG. 16
STACKING OF SCAFFOLD WITH THROUGH-HOLES AND SCAFFOLD WITH SET OF
MICROMACHINED UNITS, THROUGH-HOLES AND CHANNELS

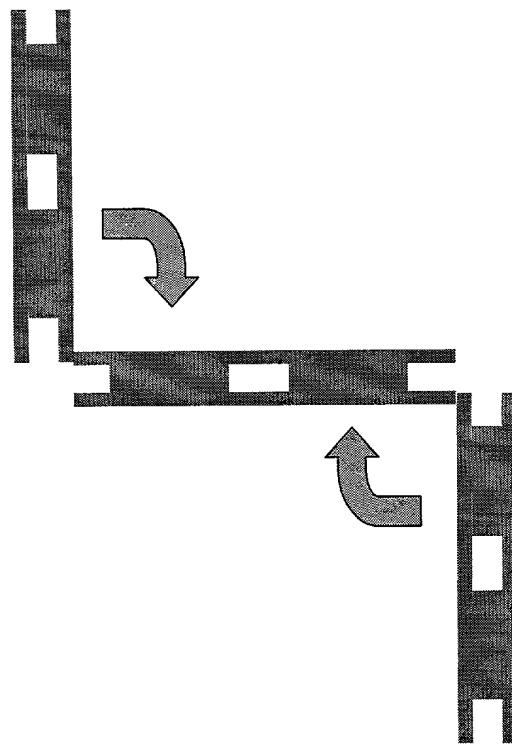


FIG. 17
FOLDING METHOD FOR FORMING A THREE-DIMENSIONAL POLYMER
SCAFFOLD

Abumin Production for 24 hrs

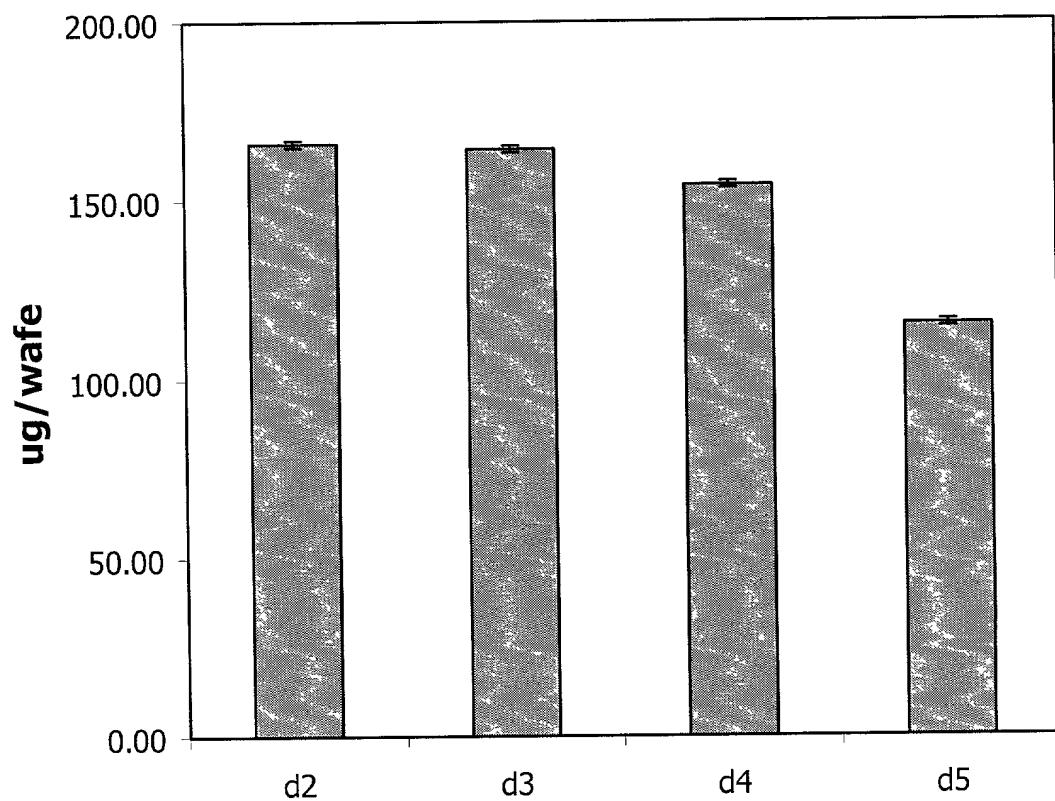


FIG. 18
ALBUMIN PRODUCTION

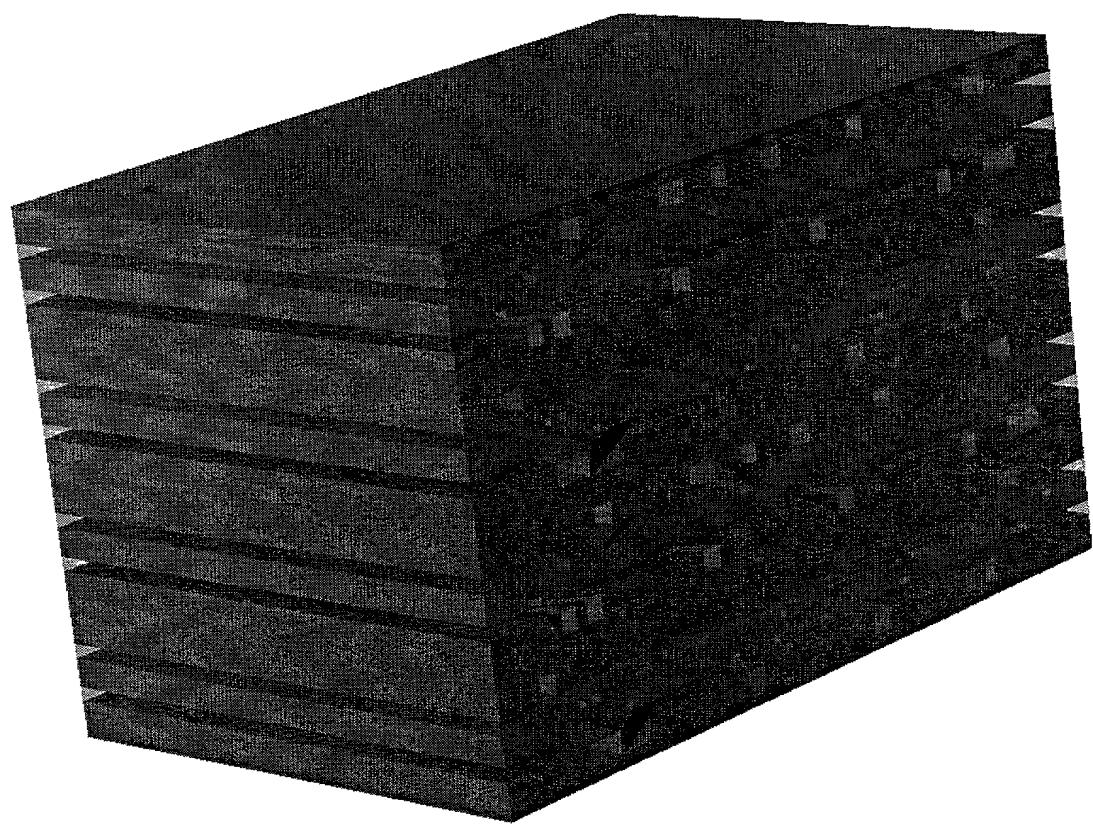


FIG. 19
STRIATED STACKED SCAFFOLD SYSTEM

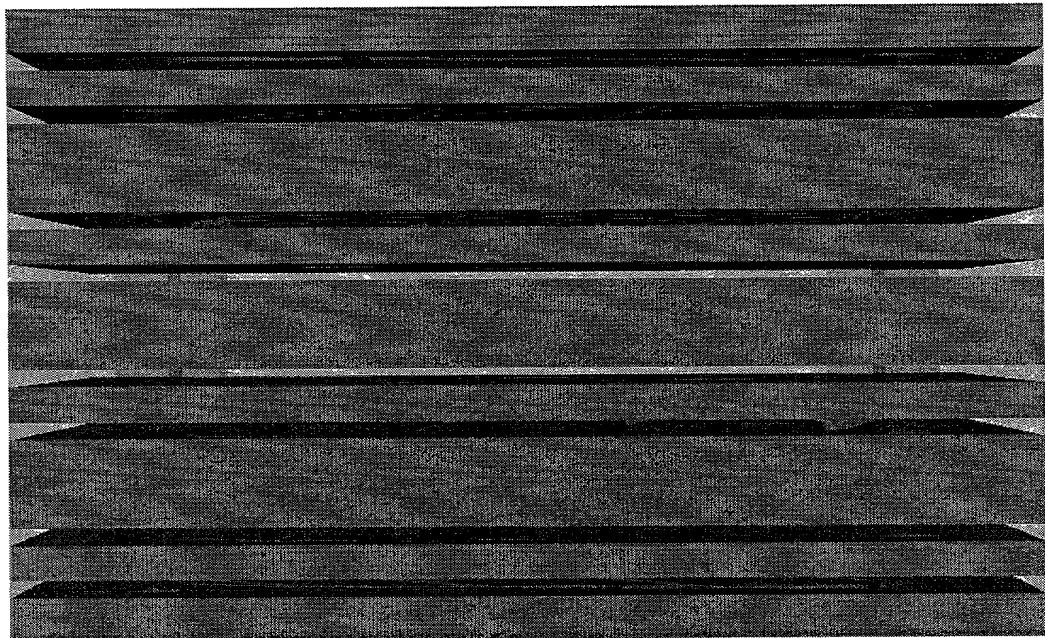


FIG. 20
STRIATED STACKED SCAFFOLD SYSTEM

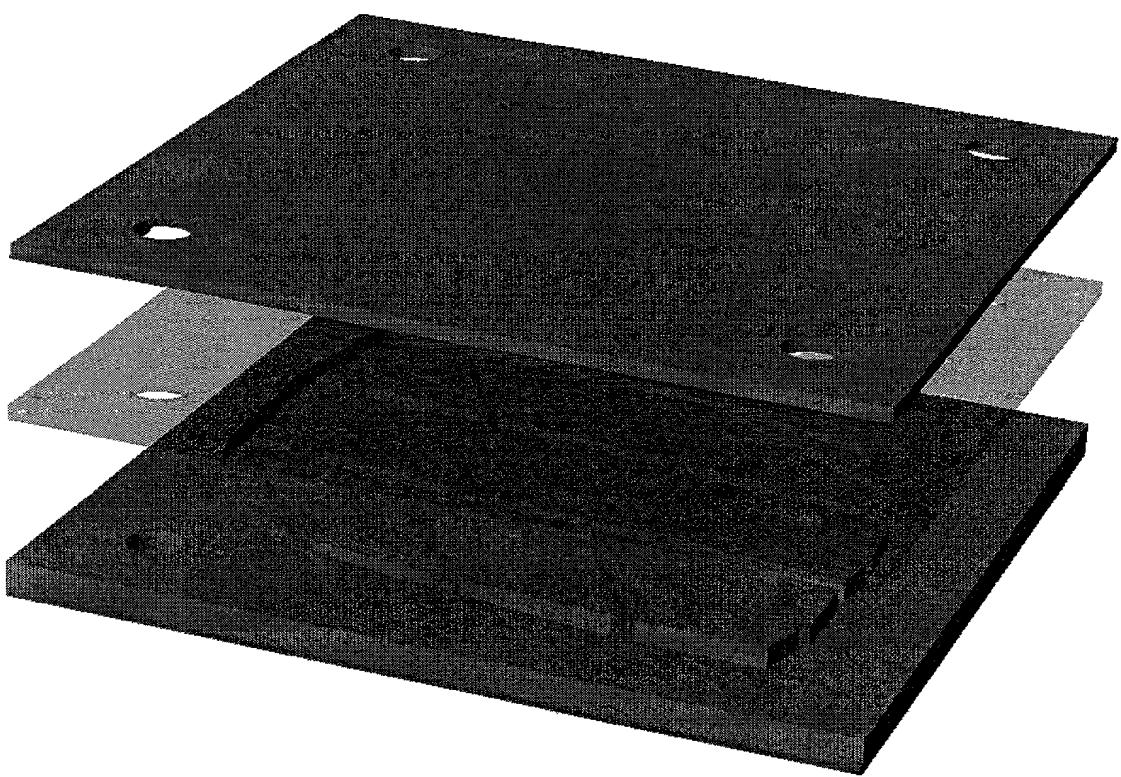


FIG. 21
STRIATED STACKED SCAFFOLD SYSTEM

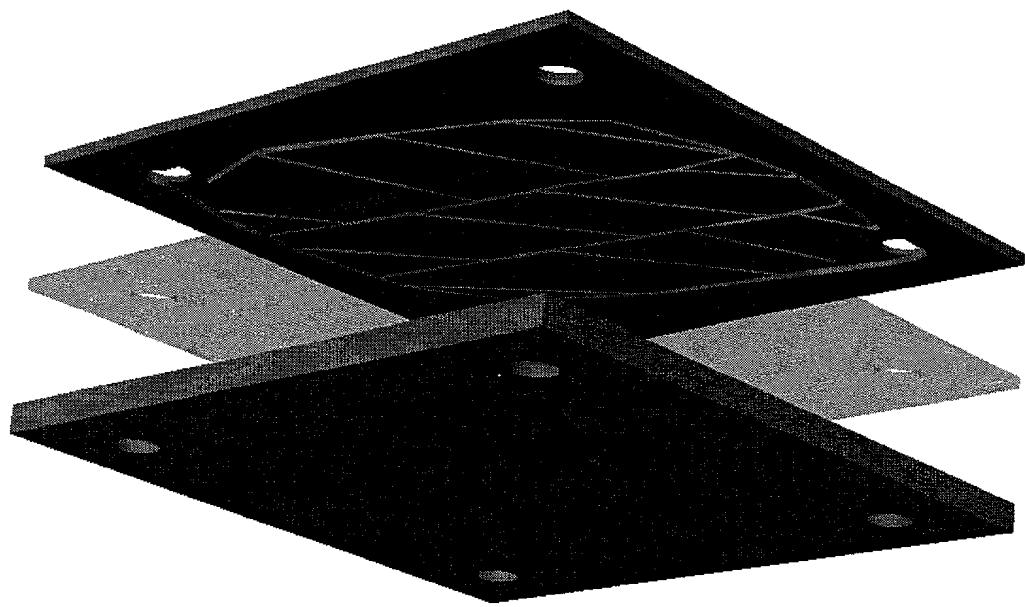


FIG. 22
STRIATED STACKED SCAFFOLD SYSTEM